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QUARTERLY INDUSTRY REPORT

3 Growth of Franchised Printing Centers

5 U.S. Trade and the Florence Agreement

11 New Levels Seen for U.S. Magazines

15 Technology's Influence in the Graphic Arts

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FRANCHISED PRINTING CENTERS GROW RAPIDLY

By Charles R. Cook

The licensing system known as franchising has been an accepted manner of business in some industries for many years. Traditional types of franchising have been automobile dealers, gasoline stations, soft drink bottlers, and motels, to list a few.

With the almost magical appearance of the many hamburger-fried chicken-roast beef sandwich type fast food emporiums that seemed to dot every highway and appear in shopping centers overnight, franchising became the way to enter many businesses with a minimum of financial as well as technical requirements.

Franchising is a contractual agreement where both the franchisee and the franchisor hope to ultimately realize financial gain. In most agreements the franchisor provides the franchisee with training in not only the technical aspects of the business, but also provides a limited amount of schooling in sound business management practices. The franchisor provides assistance in seeking adequate financing, proper site selection, business start up promotions, marketing advice and advertising promotions. In most cases, he provides the machinery necessary for operation and offers on-going sales and promotional aid programs. For these services the franchisee pays a lump sum payment as well as a predetermined royalty on gross sales of the operation.

Franchising Comes to Printing

The speedy fulfillment of short press run orders has been a practice of the printing trades for many years. However, in recent years more and more organizations such as service clubs, trade associations, religious groups, law firms, and many small businesses as well as individuals have turned to print media as a vehicle to disseminate information. This proliferation of print orders for what is almost always one-color, short run work has caused many commercial printers to turn customers away either because they could not handle the work within the deadline demanded, or did not want to be bothered by such small, low profit jobs. Hence, the birth of fast printing services. Many commercial printers established subsidiary operations to handle these types of jobs, and subsequently began franchising the operations first in other sections of the same metropolitan area. Today, some franchised printing operations are a nationwide network of small business under the direction of one central corporate franchisor.

Printing/Copy Centers Measured

The franchising of printing/copying centers became recognizable as a viable business in the economy less than two decades ago. (The term INSTANT PRINTING is a trademark that was registered with the U.S. Patent Office in 1967.) About two years ago the Service Industries Division of the Bureau of Domestic Commerce began work on a survey that would eventually measure the extent of franchising in the U.S. economy for 19 types of franchised businesses. The survey included information for the years 1969, 1970, and 1971.

The results of the survey are now published and one of the franchised businesses included under the general heading of "Business Aids and Services" is printing/copying centers.

In 1969, the first year statistics were collected for franchised printing/copying centers, there were 251 locations offering this service (see table 1). Forty-four of the centers were franchisor operated and the remaining 207 were run by franchisees. In the next year 78 more were opened, a jump of 31% from the 1968 count. By the end of 1971, the total number of fast printing centers had totaled 416, two-thirds more than in 1968. Only 12% of all the centers in 1971 were franchisor operated, the remaining locations were under the management of franchisees. The 1969 franchisee/franchisor ratio was 82%/18%.

Even more impressive than the growth in number of centers has been the significant jump in total sales of these centers in the 2-year period. In 1971 the total sales figure was just under $16 million, an amount that was over double the sales recorded in 1969. Sales in 1969, at $8 million was almost half again as much in 1970, rising 49% to almost $12 million. The 1971 sales represented a 36% increase over the previous year.

As with the copy center operation, the greatest portion of sales are in the franchisee operated centers. In every year of the survey $8 of every $10 was in centers operated by the franchisee. In 1971, $13 of the $16 million in sales were such; an increase of 39% from the 1970 portion and 110% higher that franchisee sales in 1969, which totaled just over $6 million.

Printing Centers Among Highest in Growth

In the 1969-71 period printing and copying franchised services exhibited the second highest percentage change in number of establishments at 65.7%. The highest growth in the two-year period was the 101% jump in number of accounting, credit, collection agencies and general business systems franchises. This same category, with a 142% rise in sales in the same period, was also number one in sales growth. The 102% jump in printing/copying center sales placed this business third, behind the 114% increase in sales of recreation, entertainment and travel franchise sales.

The full report, FRANCHISING IN THE ECONOMY: 1969-1971, is available through the National Technical Information Services, Washington, D.C. 20230. The price is 50 cents; purchase orders should specify publication number COM 71-50-389.

Table 1.—Franchised Printing and Copying Services: 1969-71

Item	1971[1]	1970	1969	Percent increase		
				1971-70	1970-69	1971-69
Establishments (number):						
Total	416	329	251	26.4	31.1	65.7
Franchisor	50	45	44	11.1	2.3	13.6
Franchisee	366	284	207	28.9	37.2	76.8
Sales ($1,000):						
Total	15,952	11,757	7,904	35.7	48.7	101.8
Franchisor	2,656	2,164	1,576	22.7	37.3	68.5
Franchisee	13,296	9,593	6,328	38.6	51.6	110.1

[1] Estimated by respondents to survey.

Source: Bureau of Domestic Commerce, *Franchising in the Economy: 1969-1971.*

1972-73 OCCUPATIONAL OUTLOOK HANDBOOK NOW AVAILABLE

The Department of Labor's Bureau of Labor Statistics has announced the recent release of the 1972-73 OCCUPATIONAL OUTLOOK HANDBOOK. The HANDBOOK provides comprehensive information on the employment outlook in about 800 occupations and 30 major industries in the United States. It is widely used in vocational guidance in high schools and colleges, State employment service offices, the Veterans Administration, and other agencies that provide counseling services. In addition to the HANDBOOK itself, available from the Superintendent of Documents, Washington, D.C. for $6.25, reprints of each section are available to the public.

Two reprints that would be of particular interest to readers of PRINTING AND PUBLISHING are the Employment Outlook for Printing Occupations and the Employment Outlook in the Paper and Allied Products Industries. Both the Printing reprint, bulletin 1700-109 at 20 cents and the Paper Industries reprint, bulletin 1700-128 at 15 cents are available from any regional office of the Bureau of Labor Statistics or the Superintendent of Documents, Washington, D.C. 20402.

U.S. ADHERENCE TO THE FLORENCE AGREEMENT: DUTY-FREE TRADE IN PRINTED PRODUCTS

By William S. Lofquist

The major tariff and trade instrument relating to U.S. imports and exports of printed matter is the Florence Agreement. This international statute provides for the duty-free entry of books, magazines, newspapers, maps, music and tourist literature among 64 member countries. The United States has been signatory to the Agreement since February 1967.

The basic concepts of the Agreement were formulated at a General Conference of the United Nations Educational, Scientific and Cultural Organization in 1948. Titled "Agreement on the importation of educational, scientific and cultural material," the instrument was adopted by the General Conference of Unesco at Florence, Italy, in 1950. A summary of the Agreement's purpose is contained in a 1969 operational guide:

> The major purpose of the agreement, as its title indicates, is to make it easier to import educational, scientific and cultural materials. It reduces tariff and trade obstacles to the international circulation of these materials, permitting organizations and individuals to obtain them from abroad with less difficulty and at less cost.

In its early stages of existence the Agreement's overriding concern was the elimination of custom tariffs. There is general acknowledgment that in this respect the Agreement has achieved its purpose. However, while tariff barriers have been overcome, there is a feeling that other, perhaps more subtle, obstacles are growing in importance. The grantings of import licences and/or foreign exchange, for example, are currently cited as new goals for the Florence member nations. The Agreement now provides for the unconditional granting of licenses and/or foreign exchange under certain conditions (publications to the blind, government publications, publications consigned to libraries and certain institutions) but there is a substantial volume of international printed material that does not qualify under the conditions stated above and thus remains ineligible for favorable licensing or foreign exchange treatment.

U.S. Trade in Florence Materials

The United States engages in a substantial volume of international trade in those printed products covered by the Florence Agreement. The primary products are books, maps, music, newspapers and periodicals. U.S. exports and imports of these items, covering the period 1967-71, are shown in table 2.

Total U.S. foreign trade in printed matter currently exceeds $500 million. Approximately 80% of this volume consists of products which would come within the jurisdiction of the Florence Agreement, if all countries were to become members of the Agreement. The fact that several major U.S. trading partners—including Argentina, Australia, Brazil, Canada, the Republic of South Africa, and Venezuela—are not signatories to Florence drops this percentage considerably. Thus only 40% of the U.S. export volume in printed products meets the criteria of (1) coming under the classification of a Florence protected item,

Table 2.—U.S. Foreign Trade of Selected Printed Products, 1967-71

[In million dollars]

Item	1971	1970	1969	1968	1967	Annual rate of growth, 1967-71 (percent)
Exports, total	$271.6	$265.7	$253.8	$236.9	$226.7	4.6
Books	176.7	174.9	166.1	151.6	143.2	5.4
Maps	3.2	3.0	3.5	3.1	3.3	–0.8
Music	1.4	1.3	1.6	1.2	0.9	11.7
Newspapers	3.8	2.8	3.6	2.9	2.9	7.0
Periodicals	86.5	83.7	79.0	78.1	76.4	3.2
Imports, total[1]	127.8	117.9	93.9	81.3	78.4	13.0
Books	101.0	92.0	78.4	68.4	69.3	9.9
Maps	1.4	1.5	1.4	2.1	1.3	1.9
Music	0.8	0.7	0.6	0.4	0.5	12.5
Newspapers	8.1	6.8	5.5	4.7	3.5	23.3
Periodicals	16.5	16.9	8.0	5.7	3.8	44.4

[1] Data from 1967 through September 1969 do not include individual shipments valued under $100. Effective October 1969, data do not include individual shipments valued under $250.

Source: U.S. Department of Commerce, Bureau of the Census.

and (2) is being sent to a Florence member country. Approximately 72% of U.S. imports of printed matter enter this country duty free under Florence.

Table 2 provides growth rates for the principal Florence covered products exported from and imported to the United States. The growth of U.S. exports averaged a low 4.6% per year. Shipments of U.S. periodicals in the period 1967-71 increased to $87 million from $76 million, averaging an annual rate of growth of 3.2%. Exports of U.S. books, the largest product category, moved to $177 million in 1971 from $143 million in 1967. U.S. book export growth, averaging 5.4% per year, was not substantially higher than the 4.6% rate recorded by all U.S. exports classified under the Florence Agreement. The two export products with relatively high growth rates, printed music and newspapers, had combined U.S. exports of just over $5 million in 1971. U.S. map shipments fell slightly between 1967 and 1971.

While U.S. exports of Florence Agreement items were edging upward in the 1967-71 span, U.S. imports of products covered by the Agreement were fairly surging. Imports of books jumped to $101 million from $69 million, newspapers moved to $8 million in 1971 from $4 million in 1967, and U.S. periodical imports leaped to $17 million from $4 million in this 4-year span. Total U.S. imports of Florence Agreement covered products reached $128 in 1971, up from $78 million in 1967. It is notable that U.S. exports and imports of printed music had remarkably similar growth rates, though in both areas it ranked as the smallest item in total dollar volume.

Books Dominate Florence Categories

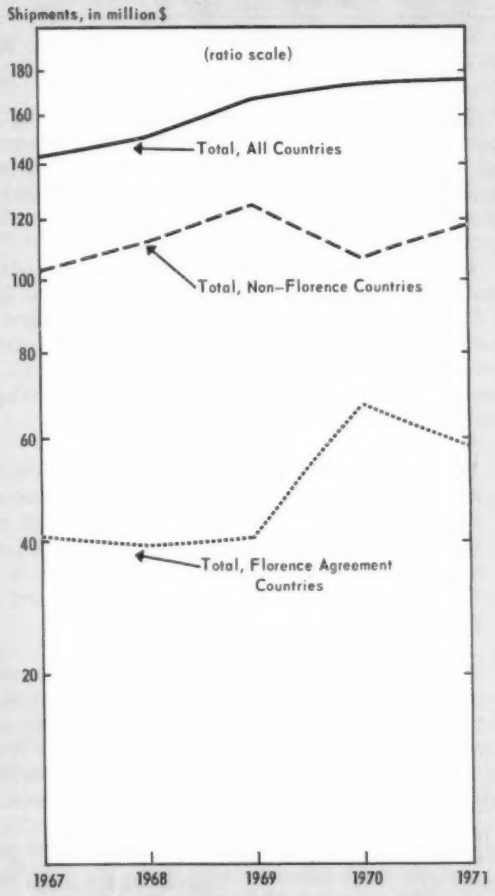
The largest single product category included in the articles of the Florence Agreement is books. In terms of U.S. foreign trade in printed matter, the volume of book shipments accounts for 52% of U.S. exports and 57% of U.S. imports. Charts 1 and 2 delineate U.S. foreign trade in books.

The fact that several large trading partners of the United States have yet to become signatory to the Florence Agreement is shown in chart 1. Slightly over two-thirds of total U.S. book exports are shipped to non-Florence countries. Outstanding among these are Canada, Australia, and the Republic of South Africa. These three countries account for sizable purchases of U.S. books and all levy various rates of duty or other taxes on U.S. book exports. While total U.S. book exports rose to $177 million in 1971 from $143 million in 1967, about half of this increased export volume has gone to non-Florence countries. As seen in chart 1, book shipments to countries who are not members of the Agreement increased to $118 million from $103 in the 1967-71 span. Book exports to Florence member countries in the same time frame increased by $19 million: to $59 million in 1971 from $40 million in 1967.

This graphic display of shipments to Florence and non-Florence countries presents a mixed export picture due to changes in Florence membership. For example, the entry of Japan as a member of the Florence Agreement in June 1970 has somewhat narrowed the gap between book shipments to Florence vs. non-Florence countries. Thus, the inclusion or exclusion of one or more major trading countries (such as Canada or Australia) can have a significant impact on the data.

Chart 2 shows the trend of U.S. book imports between 1967 and 1971. In sharp contrast to the export situation, this chart portrays the dominance of Florence member countries with

Chart 1. — U.S. Book Exports, 1967 - 71



Source: U.S. Department of Commerce, Bureau of the Census

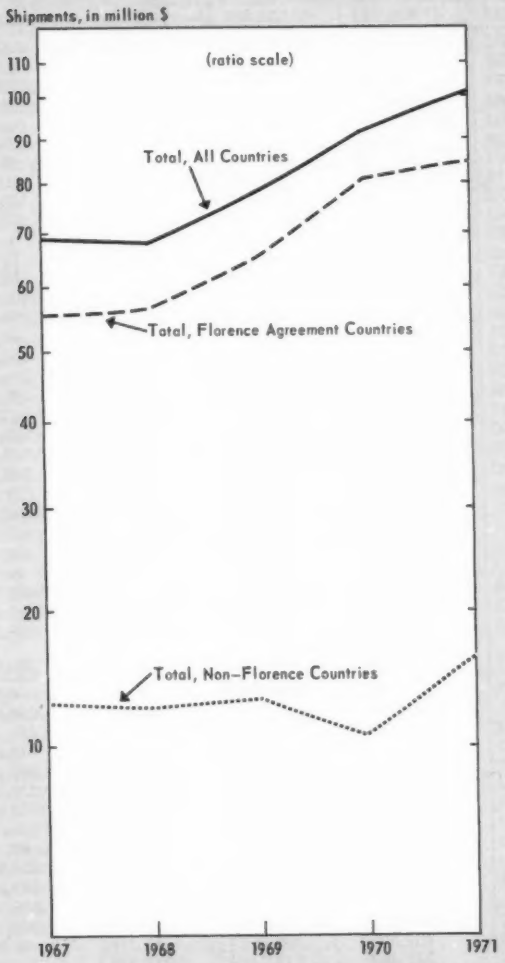
regard to the U.S. importation of books. About 85% of all U.S. book imports are from Florence Agreement countries, while only 33% of U.S. book exports are to these same member countries. The volume of book imports from Florence countries jumped to $85 million in 1971 from $56 million in 1967, while U.S. imports from non-Florence countries rose to just $16 million from $13 million in the same period.

Major Trading Partners

Tables 3 and 4 provide a breakdown of the principal countries that are actively engaged in international book trade with the United States. Data for sixty countries cover U.S. exports and imports of books for the years 1967 through 1971.

As indicated in table 3, there are 18 countries whose individual book purchases from the United States exceeded $1 million in 1971. The primary buyer of U.S. books was Canada, a

Chart 2.– U.S. Book Imports, 1967 - 71



Source: U. S. Department of Commerce, Bureau of the Census.

non-Florence country, whose total book purchases of $80 million was about four times larger than that of the United Kingdom, the second largest market for U.S. books. The Canadian market for U.S. books increased by $19 million in the period 1967-71. U.S. book exports to Japan went from $17 million in 1967 to $28 million in 1970, but then dropped to $12 million in 1971. One reason for this substantial decline is the initiative shown by U.S. publishers in reaching the Japanese book market by having increasing quantities of U.S.-authored material printed in Asia.

The export data emphasize the continued reliance of U.S. book publishers on countries who have yet to join the Florence Agreement. While most of the major European countries are members of Florence, the English-speaking, book oriented countries of Canada, Australia, and the Republic of South Africa remain outside Florence and thus place additional costs on U.S. firms attempting to reach book purchasers in these countries.

The high concentration of U.S. book imports from Florence member countries is shown in table 4. Well over one third of total U.S. imports of books are from the United Kingdom. The Florence countries of Japan, West Germany, the Netherlands and Italy combine to provide just under an additional third of all U.S. book imports. Canada and Mexico are the only non-Florence countries with sizable shares of the U.S. book import market. Imports from Florence member countries, aided by Japan's membership in 1970, surged upwards by $29 million between 1967 and 1971. U.S. book imports by non-Florence countries advanced by only $3 million in the same period.

The freedom to transmit knowledge across national boundaries without encountering either tariff or non-tariff barriers remains a yet distant goal of Unesco. The addition of new adherents to the Florence Agreement is encouraging: membership now stands at 64, a gain of 12 countries since 1967. As the list of members grows, international trade in selected printed products–especially books–will reach ever-widening markets. The U.S. publishing industry should be among the prime beneficiaries of continued activity in the reduction of obstacles to the flow of ideas.

Table 3.—U.S. Exports of Books to Selected Countries, 1967-71

[In dollars]

Country	1971	1970	1969	1968	1967
Total, all countries	$176,662,158	$174,936,928	$166,141,099	$151,623,195	$143,193,226
Florence Agreement countries, total	58,531,214	67,505,493	40,566,888	39,287,103	40,431,415
Belgium-Luxembourg	542,377	456,075	769,463	845,415	730,122
Cyprus	762,394	27,925	41,200	46,521	81,352
Denmark	185,787	176,440	217,974	181,083	270,233
El Salvador	129,603	41,741	60,930	28,536	175,032
France	660,051	884,177	595,733	608,123	683,367
Greece	222,234	295,608	209,231	410,167	673,479
Guatemala	212,481	143,489	153,521	89,729	80,473
Iran	148,118	178,028	128,742	205,303	202,551
Israel	513,778	468,490	714,198	221,046	185,534
Italy	2,761,302	3,420,021	5,922,547	7,113,030	5,602,381
Japan[1]	12,314,700	28,324,936	(1)	(1)	(1)
Kenya	101,800	202,217	50,896	39,217	57,367
Malaysia	242,492	347,217	266,336	402,216	768,705
Netherlands	3,283,822	2,971,143	2,833,038	2,734,264	2,990,179
New Zealand	1,531,908	1,055,588	833,377	1,329,523	1,984,334
Nicaragua	96,731	126,611	76,995	54,633	62,057
Nigeria	390,012	298,636	165,401	81,755	133,043
Norway	210,104	1,703,480	142,538	134,369	224,222
Pakistan	73,584	239,898	236,012	187,942	180,932
Philippines	3,814,410	2,531,833	3,918,124	2,839,905	2,490,905
Singapore	3,024,770	1,335,895	314,274	448,746	505,436
South Vietnam	175,550	94,073	309,864	147,998	155,008
Spain	670,710	431,842	619,667	500,927	648,855
Sweden	326,389	419,164	480,696	506,835	551,396
Switzerland	715,432	523,131	624,009	597,710	486,758
Thailand	626,101	618,429	906,709	613,382	450,710
Trinidad and Tobago	256,319	109,411	106,683	103,686	166,726
United Arab Republic	170,097	217,517	209,369	78,983	74,534
United Kingdom	20,658,298	16,723,866	16,835,890	16,213,294	17,460,023
West Germany	3,374,562	2,749,245	2,461,897	2,016,424	1,685,913
All other Florence countries	335,298	389,367	361,574	506,341	669,788
Total, other countries	118,130,944	107,431,435	125,574,211	112,336,092	102,761,811
Angola	634,498	1,001,394	1,088,846	13,196	4,004
Argentina	1,811,201	1,598,991	1,445,855	594,503	659,011
Australia	13,388,183	10,356,797	8,696,581	10,113,224	8,444,132
Bahamas	318,867	227,460	262,925	195,250	144,084
Brazil	3,161,742	3,083,465	2,802,025	3,058,510	2,804,283
Canada	79,682,482	73,205,325	72,325,007	63,423,987	60,672,865
Chile	755,358	568,400	741,782	1,025,183	913,514
Colombia	318,432	1,082,098	624,840	235,490	166,487
Costa Rica	104,520	86,146	76,315	45,581	58,320
Dominican Republic	187,276	243,503	310,630	177,070	164,596
Ethiopia	104,145	54,052	114,487	81,529	122,317
Hong Kong	221,475	456,653	267,558	253,434	265,939
India	2,047,559	2,095,162	1,709,775	855,108	1,042,128
Indonesia	1,092,426	402,607	386,019	49,279	66,089
Ireland	244,210	277,353	114,720	246,338	287,284
Jamaica	472,383	276,707	285,608	194,435	143,951
Lebanon	328,737	237,106	126,948	125,990	205,336
Liberia	72,433	230,247	146,856	321,826	227,219
Libya	39,062	50,525	38,447	112,760	44,128
Mexico	3,358,612	3,085,375	2,346,653	2,221,505	2,588,684
Panama	603,201	652,976	583,746	661,379	756,637
Peru	803,653	441,271	645,436	376,758	571,111
Portugal	36,701	146,703	157,541	144,877	315,540
Republic of China (Taiwan)	68,107	39,531	40,914	42,360	24,450
Republic of Korea	1,380,961	1,384,340	744,456	567,672	218,252
Republic of South Africa	4,366,556	3,310,590	3,530,103	3,055,223	2,699,887
Saudi Arabia	191,469	180,807	125,975	212,353	368,611
Turkey	180,001	603,108	497,492	347,127	55,848
Uruguay	114,831	44,305	7,830	4,947	9,406
Venezuela	1,181,617	1,177,866	1,006,716	416,044	551,487
All other countries	860,246	830,572	[2]24,322,125	[2]23,163,154	[2]18,166,211

[1] Signed the Florence Agreement in June 1970.
[2] Includes Japan.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 4.—U.S. Imports of Books From Selected Countries, 1967-71

[In dollars]

Country	1971	1970	1969	1968	1967
Total, all countries	$100,993,571	$92,022,837	$78,352,540	$68,391,884	$69,241,912
Florence Agreement countries, total	84,912,626	81,297,580	65,175,643	56,590,565	56,183,013
Belgium-Luxembourg	1,205,725	876,753	922,029	801,603	1,096,749
Cyprus	13,200	2,304	6,375	10,957	1,100
Denmark	333,853	526,514	578,838	359,819	293,213
El Salvador	4,502	.....	825	5,787	.....
France	2,581,355	4,120,552	3,396,271	3,652,768	2,612,471
Greece	76,307	43,487	50,299	15,308	19,734
Guatemala	800	3,161	2,205	1,580	440
Iran	906	1,453	2,131	1,488	61,666
Israel	1,476,605	956,924	1,004,807	670,769	396,535
Italy	6,491,107	6,690,372	6,660,852	5,002,292	5,084,585
Japan[1]	10,121,699	7,883,459	(1)	(1)	(1)
Kenya	56,568	25,415	35,601	13,637	15,452
Malaysia	3,748	19,046	19,728	11,143	14,660
Netherlands	8,814,526	8,871,190	8,166,465	7,103,325	6,404,291
New Zealand	27,153	23,226	154,158	14,538	15,908
Nicaragua	.....	450	.....	1,075	.....
Nigeria	9,538	14,534	3,322	945	613
Norway	66,223	66,929	58,120	62,894	78,845
Pakistan	1,787	2,333	1,189	.....	13,874
Philippines	9,791	7,919	5,120	8,026	15,266
Singapore	759,269	659,779	78,786	1,200	5,546
South Vietnam	.....	.....	.....	.....	.....
Spain	2,871,040	3,598,730	1,717,248	1,665,992	1,886,627
Sweden	898,439	531,929	949,876	821,832	620,193
Switzerland	2,867,459	4,102,388	3,609,576	3,297,893	3,219,065
Thailand	2,475	1,300	3,307	1,554	2,037
Trinidad and Tobago	.....	500	720	2,069	.....
United Arab Republic	.....	500	.....	6,400	350
United Kingdom	38,599,427	33,919,226	30,360,697	26,095,537	27,837,150
West Germany	6,329,774	7,242,679	6,670,563	6,242,293	5,763,354
All other Florence countries	1,289,350	1,104,528	1,171,535	717,841	743,289
Total, other countries	16,080,945	10,725,257	13,176,897	11,801,319	13,058,899
Argentina	368,147	461,895	396,046	260,854	626,539
Australia	311,391	326,635	298,929	248,797	284,276
Barbados	2,000	2,234	800	.....	.....
Brazil	72,182	54,266	16,767	6,857	4,923
Canada	10,615,863	5,355,159	3,400,294	2,718,736	3,057,167
Chile	5,157	38,565	128,006	18,772	8,990
Colombia	359,257	244,689	37,263	38,846	100,534
Costa Rica	1,661	622	10,371	6,759	5,276
Czechoslovakia	365,654	327,841	430,182	608,893	924,152
Dominican Republic	12,569	9,666	15,274	18,919	3,644
East Germany	21,368	53,705	73,721	59,295	14,792
Ecuador	2,174	2,516	1,785	562	.....
Hong Kong	663,814	516,489	350,264	153,527	104,698
Hungary	44,738	13,806	160,008	81,344	177,480
India	205,065	274,148	174,156	176,006	138,247
Ireland	347,519	513,861	153,497	151,481	93,599
Jamaica	2,259	806	.....	1,791	9,324
Lebanon	27,212	9,059	5,308	49,120	33,582
Mexico	1,548,956	1,537,761	1,229,732	1,108,742	2,575,829
Panama	396,574	432,830	259,402	120,183	35,369
Paraguay	30,000	.....	.....	.....	.....
Peru	4,828	3,235	10,426	793	3,431
Portugal	42,054	12,534	109,640	22,915	5,007
Republic of China (Taiwan)	325,136	263,851	69,619	56,158	52,146
Republic of Korea	23,078	14,733	5,500	18,606	20,005
Republic of South Africa	31,763	74,088	16,571	136,590	34,999
Turkey	28,543	16,925	.....	14,181	.....
Uruguay	44,859	4,531	2,595	517	600
USSR	19,276	26,247	12,875	23,329	169,616
Venezuela	109,453	73,616	49,108	362,739	510,938
All other countries	46,051	56,444	[2]5,758,258	[2]5,336,007	[2]4,063,736

.....—Represents zero shipments.
[1]Signed the Florence Agreement in June 1970.
[2]Includes Japan.

Source: U.S. Department of Commerce, Bureau of the Census.

Countries Signatory to the Florence Agreement As of January 1972

Afghanistan
Austria
Belgium
Bolivia
Cambodia
Cameroon
Ceylon
Congo (Brazzaville)
Cuba
Cyprus
Denmark
El Salvador
Finland
France
Gabon
Ghana
Greece
Guatemala
Haiti
Iran
Israel
Italy
Ivory Coast
Japan
Jordan
Kenya
Laos
Luxembourg
Malagasy Republic
Malawi
Malaysia
Malta
Mauritius
Monaco
Morocco
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Norway
Pakistan
Philippines Republic
Poland
Rumania
Rwanda
Sierra Leone
Singapore
South Vietnam
Spain
Sweden
Switzerland
Tanzania
Thailand
Trinida and Tobago
Tunisia
Uganda
United Arab Republic
United Kingdom
United States of America
Upper Volta
West Germany
Yugoslavia
Zaire

GROWTH OF THE U.S. PERIODICALS INDUSTRY

By Adair Mitchell

The periodical publishing industry serves three distinct markets: the general population (through consumer or specialized magazines); businessmen (via business or trade publications); and the farmer. Industry revenues come from newsstand or single-copies sales, short or long term subscriptions, and from the sale of advertising. Increasing population, rising income, and additional educational attainment, coupled with continuing needs for informational material should provide expanding markets for the periodical publishing industry.

Periodical Receipts

The periodical publishing industry, which had enjoyed a steady growth pattern for the past several years, suffered a decline in receipts of 3.4% in 1970 according to the lastest Bureau of Census data. Receipts totaled $2,797.8 million compared with $2,896.6 million in 1969. Data on periodical receipts by individual product category are shown in table 5, for the years 1967 through 1970. The table includes total product receipts of periodicals, whether or not they are manufactured by establishments classified in the period publishing industry (SIC 2721). However, about 97% of all periodical receipts are obtained by establishments classified as periodical publishers.

Periodicals are classified by the Bureau of the Census into four broad subject groups. General interest magazines comprise the largest group and account for about 58% of the total, and business magazines equal about 28%. The third group, other periodicals, which includes religious magazines, comics, magazine supplements for Sunday newspapers, and unclassified periodicals, represents about 11%, with farm magazines accounting for the balance of 3%.

Although receipts from advertising in 1970 were below 1969 for all categories, sales and subscriptions were up 13.6% for farm magazines and 5.4% for general magazines. Receipts for other periodicals, which combined advertising and sales, were also up 8.1%. Business magazines sales and subscriptions receipts were down 9.8%.

Foreign Trade Is Expanding

The value of U.S. exports of periodicals has followed a steadily rising trend for the past several years and reached a peak of $86.5 million in 1971, an increase of 3.4% above the 1970 level of $83.7 million. Canada is the largest market for U.S. periodicals and receives about two-thirds of the total U.S. exports. Shipments to Canada amounted to $64.2 million in 1971 compared with $61.7 million in 1970. Other important markets include Australia, United Kingdom, Republic of South Africa, Japan, Mexico, the Netherlands, and Venezuela. These countries provided markets for periodicals valued at $1.0 to $4.7 million in 1970 or 1971. Shipments to the first three countries increased in 1971 over the preceding year, while exports to the latter four countries declined slightly. Exports of U.S. periodicals by country of destination are shown in table 6. In addition to exportation of periodicals published in the United States, several publishers have approached international markets through joint ventures with foreign colleagues. New periodical publishing operations are forming in such countries as France, Italy, West Germany, and Japan. Spanish language periodicals issued by U.S. publishers are enjoying considerable readership in the Latin American countries, such as Mexico, Argentina, Venezuela, and Panama.

The past 5 years have shown dramatic increases in the value of periodicals imported into the United States, which rose from $3.4 million in 1966 to a high of $16.9 million in 1970, representing a fourfold increase during that period. However, imports in 1971 declined slightly to $16.5 million, about 2.4%. The United Kingdom was the principal supplier of periodical imports and contributed shipments of $4.7 million in 1971. Other important suppliers included France, Canada, and the Netherlands, with sharp increases during the past 3 years, and Japan and Mexico from whom shipments to the United States declined in 1971. Imports of periodicals into the United States by country of origin are shown in table 7, for the years 1969 through 1971.

Population Changes Affect Media

Because of the rapidly changing characteristics of our population, the magazine industry is adapting its editorial direction to changing consumer interests. Stimulated by increasing income, leisure time, and educational attainment, consumers have changed their values, personal tastes and life styles, which have in turn changed the readers' interests.

The heaviest magazine reading age group is that of the 20 to 35 year-olds which is the fastest growing segment of the population. Women's interests have changed in the past two decades because the number of working wives has doubled. They have boosted family income and have acquired different interests and broader viewpoints. Educational levels, which have experienced a dramatic increase in the past several years, are still growing. Leisure time is increasing and provides more opportunities for reading and permits individuals to develop new interests. The general public is becoming more interested in factual information on consumer affairs, environmental programs, and other issues affecting the individual and the community.

A Forward Look

The periodical publishing industry is facing a serious challenge which is common to all other industries, that of rising costs. Increasing costs in paper, printing, and postage are inevitable and must be dealt with. Despite the demise of some major mass publications, the magazine industry appears to be healthy and enduring. Periodical publishers are reassessing their editorial direction and reevaluating and reexamining their production and distribution methods and systems. Some publishers are increasing sales and subscriptions rates and reducing unprofitable and costly fringe circulation. Other publishers are seeking economies and efficiencies in production and distribution, while still others are venturing into non-magazine activities.

Table 5.—Periodical Product Receipts, 1967-70

[in million dollars]

SIC product code		1970	1969	1968	1967
2721 --	Periodicals, total	$2,797.8	$2,896.6	$2,784.0	$2,613.1
27211 --	Farm periodicals: Receipts from subscriptions and sales	22.8	16.6	14.7	11.3
27211 12	General	.....	.....	.....	9.2
27211 16	Specialized	.....	.....	.....	2.1
27212 --	Farm periodicals: Receipts from advertising	43.6	58.8	55.0	45.2
27212 11	General	.....	.....	.....	31.4
27212 15	Specialized	.....	.....	.....	13.8
27213 --	Specialized business and professional periodicals: Receipts from subscriptions and sales	195.1	216.2	181.8	152.1
27213 07	Industrial, engineering, and technical	.....	.....	.....	44.9
27213 13	Merchandising	.....	.....	.....	23.8
27213 17	Professional, institutional, and service	.....	.....	.....	72.1
27213 00	Specialized business and professional: Receipts from subscriptions and sales, n.s.k.	.....	.....	.....	11.3
27214 --	Specialized business and professional periodicals: Receipts for advertising	522.6	574.9	544.5	511.4
27214 11	Industrial, engineering, and technical	.....	.....	.....	307.9
27214 13	Merchandising	.....	.....	.....	120.7
27214 15	Professional, institutional, and service	.....	.....	.....	73.6
27214 00	Specialized business and professional: Receipts from advertising, n.s.k.	.....	.....	.....	9.2
27215 --	General periodicals: Receipts from subscriptions and sales	722.2	685.4	648.8	559.7
27215 14	Comics	.....	.....	.....	8.5
	Women and home services:				
27215 43	Subscription sales	.....	.....	.....	63.4
27215 45	Single copy sales	.....	.....	.....	.....
	General interest and entertainment	.....	.....	.....	53.8
27215 53	Subscription sales	.....	.....	.....	231.8
27215 55	Single copy sales	.....	.....	.....	120.2
	General news:				
27215 63	Subscription sales	.....	.....	.....	47.6
27215 65	Single copy sales	.....	.....	.....	10.8
27215 74	Business news: Subscription sales and single copy sales	.....	.....	.....	15.1
27215 00	General: Receipts from subscription and sales, n.s.k.	.....	.....	.....	8.5
27216 --	General periodicals: Receipts from advertising	859.6	909.9	884.4	884.6
27216 13	Comics	.....	.....	.....	0.4
27216 43	Women and home services	.....	.....	.....	250.1
27216 53	General interest and entertainment	.....	.....	.....	457.3
27216 63	General news	.....	.....	.....	145.8
27216 73	Business news	.....	.....	.....	24.9
27216 00	General: Receipts from advertising, n.s.k.	.....	.....	.....	6.1
27217 --	Other periodicals: Receipts from subscriptions and sales and advertising	267.0	246.9	294.7	287.1
	Subscription and single copy sales:				
27217 03	Religious	.....	.....	.....	70.7
27217 05	Magazine and comic supplements for Sunday newspapers	.....	.....	.....	21.0
	Periodicals, n.e.c.:				
27217 07	Subscription sales	.....	.....	.....	71.6
27217 08	Single copy sales	.....	.....	.....	14.1
	Advertising receipts:				
27217 33	Religious	.....	.....	.....	11.2
27217 35	Magazine and comic supplements for Sunday newspapers	.....	.....	.....	47.5
27217 37	Periodicals, n.e.c.	.....	.....	.....	39.5
27217 00	Other periodicals: Receipts from subscriptions and sales and advertising, n.s.k.	.....	.....	.....	11.5
27210 --	Periodicals, n.s.k.	165.5	188.0	160.1	161.7

n.s.k.—Not specified by kind.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 6.—United States Exports of Periodicals, 1969-71

[Thousands of dollars]

Countries of destination	1969	1970	1971
North America	$58,329	$61,737	$64,169
Bahamas	74	50	147
Barbados	3	16	21
Bermuda	163	187	179
British Honduras	.....	1	1
Canada	52,929	56,163	58,952
Costa Rica	128	148	154
Dominican Republic	224	215	236
El Salvador	139	129	112
French West Indies	1	(*)	2
Guatemala	239	251	233
Honduras	82	95	100
Haiti	2	1	1
Jamaica	283	305	452
Leeward and Windward Islands	.....	1	1
Mexico	2,688	2,706	2,287
Netherlands Antilles	161	177	197
Nicaragua	158	149	148
Panama	974	1,045	828
Trinidad	82	98	118
South America	4,905	5,202	4,780
Argentina	803	641	854
Bolivia	7	46	36
Brazil	285	438	616
Chile	605	528	292
Colombia	607	649	245
Ecuador	80	88	87
Guyana	51	63	53
Paraguay	.....	(*)	18
Peru	540	555	335
Uruguay	19	28	100
Venezuela	1,908	2,166	2,144
Europe	9,478	9,698	9,529
Austria	32	55	41
Belgium and Luxembourg	334	512	559
Cyprus	14	29	26
Denmark	138	162	130
Finland	84	76	48
France	710	733	552
Germany, West	1,257	1,188	893
Greece	27	8	18
Hungary	.....	2	.....
Iceland	2	.....	.....
Ireland	38	33	46
Italy	420	489	496
Malta	(*)	1	.....
Netherlands	1,237	1,057	999
Norway	173	137	89
Portugal	2	5	5
Spain	56	88	78
Sweden	395	389	224
Switzerland	379	309	593
United Kingdom	4,130	4,412	4,703
USSR	10	8	1
Yugoslavia	40	5	28

Countries of destination	1969	1970	1971
Asia	2,051	1,902	1,867
Afghanistan	1	.....	.....
Arabia Penisula Sts., n.e.c.	.....	7	2
Bahrain	2	1	1
Hong Kong	112	97	125
India	267	72	56
Indonesia	19	11	1
Iran	5	18	11
Iraq	(*)	.....	.....
Israel	152	131	158
Japan	786	1,202	1,030
Jordan	.....	1	2
Korea, Republic of	45	21	37
Kuwait	1	.....	17
Lebanon	62	54	61
Malaysia	120	75	31
Nansei and Nanpo Islands	5	8	17
Pakistan	11	9	9
Philippine Republic	324	115	154
Saudi Arabia	29	34	36
Singapore	73	24	20
Taiwan	11	13	6
Thailand	21	2	67
Turkey	4	7	21
Vietnam, South	1	.....	5
Oceania	3,378	4,121	4,812
Australia	2,694	3,403	3,960
British West Pacific	1	.....	.....
French Pacific	1	.....	.....
New Zealand	682	718	852
Trust Territory of Pacific	.....	.....	.....
Africa	854	1,014	1,345
Botswana	.....	.....	5
Egypt	6	.....	.....
Ethiopia	1	.....	.....
Ghana	20	17	24
Kenya	4	16	15
Liberia	55	75	61
Libia	1	4	.....
Malawi	1	.....	.....
Morocco	2	.....	.....
Mozambique	(*)	1	.....
Nigeria	23	30	40
Senegal	(*)	.....	.....
Sierra Leone	4	6	7
South Africa	721	837	1,139
Southern Rhodesia	1	10	23
Swaziland	.....	.....	25
Tanzania	1	2	.....
Zambia	15	11	6
Q. South Africa	.....	5	.....
Total	$78,994	$83,674	$86,502

*Less than $500.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 7.—United States Imports of Periodicals, 1969-71

[Thousands of dollars]

Country of origin	1969	1970	1971
North America	$3,440	$5,324	$5,997
Canada	778	2,477	3,273
Dominican Republic	4	.....	10
El Salvador	.....	6	.....
Haiti	.....	2	.....
Jamaica	.....	1	.....
Mexico	2,542	2,838	2,649
Panama	116	.....	65
South America	802	738	709
Argentina	.....	.....	2
Brazil	.....	.....	(*)
Chile	5	1	3
Colombia	22	17	19
Venezuela	775	720	685
Europe	2,698	9,561	8,589
Austria	5	.....	.....
Belgium	155	11	40
Czechoslovakia	6	.....	.....
Denmark	12	8	14
Finland	10	46	38
France	634	765	1,088
Germany, West	355	320	385
Greece	5	.....	1
Ireland	4	10	36
Italy	342	345	206
Netherlands	150	433	1,860
Norway	1	2	1
Spain	20	38	93
Sweden	41	16	35
Switzerland	151	184	110
United Kingdom	804	7,382	4,669
U.S.S.R.	.....	(*)	13
Yugoslavia	2	1	.....
Asia	1,059	1,268	1,151
Hong Kong	8	17	8
India	.....	13	1
Israel	1	149	101
Japan	797	938	850
Korea	11	.....	.....
Lebanon	148	150	190
Philippine Republic	87	1	1
Saudi Arabia	1	.....	.....
Taiwan	6	.....	(*)
Oceania	6	2	13
Australia	3	2	12
French Pacific	1	.....	.....
New Zealand	2	.....	1
Africa	27	2	6
South Africa, Republic of	27	2	6
Total	$8,031	$16, 895	$16,465

*Less than $500.

Source: U.S. Department of Commerce, Bureau of the Census.

In the last decade, revenue from outside the periodical publishing field increased from 5% to 11% of all receipts. Most of this income is obtained through book or other publishing operations and some publishers are expanding their interests to other areas which are unrelated to communication.

The magazines industry is also growing through the introduction of new magazines. While 20 magazines were sold, merged or discontinued in 1971, approximately 76 new ones were introduced. During the past decade a total of 160 magazines ceased operation, but 753 new ones came into publication.

Magazines have been used in some schools to meet individual needs of high school students. In some instances a special magazine has been designed for a particular study. A student edition is provided by one magazine, while another provides supplementary teaching materials and tests. One project was carried on in classrooms in four selected schools and 106 magazines were supplied. Positive results indicated that 50% of the students expressed interest in continuing the reading of magazines. The results of the study suggest possible research into the further use of magazines as instruction media.

Rising advertising expenditures in 1971 of about 6% over 1970, according to industry sources, reflect renewed confidence in the general economy and suggest revitalization in the periodical publishing industry. Revenues for the major advertisers in the periodical industry indicated a continuing upward trend in 1972. During the first half of 1972 advertising volume was up 9% over the corresponding figures in the first half of 1971.

The optimistic outlook for exports, rising advertising expenditures, and introduction of new magazines coupled with increasing population, educational attainment and continued requirements for informational material should provide a stimulus for growth in the periodical industry.

TECHNOLOGICAL CHANGES IN THE PRINTING AND PUBLISHING INDUSTRY

By Robert V. Critchlow*

Technological changes being introduced at an increasingly quick pace throughout the printing industry have important implications for manpower. Two factors have combined to hasten the introduction of new technology: The demand for printed materials has grown to such an extent that it can no longer be met entirely by conventional printing processes and, concurrently, the state of technology has reached a point at which vastly more productive printing equipment is commercially available. Some of the innovations, such as typesetting computers and plastic printing plates, are new; others, such as web-offset presses and perforated paper tape for operating typesetting machines, have existed for 30 or 40 years, but were little used until the last decade. Use of the new technologies results in increased productivity, greater quality control at a higher level of output, and more flexibility in what is produced and the manner of its production.

These technological changes may not reduce total employment because of the offsetting demand for labor created by growth in output, but the changes are affecting the industry's manpower. Some occupations, such as typesetters, may decrease in number while others—printing press operators, lithographic platemakers, and computer-related occupations—will increase. Moreover, skill requirements are changing significantly, making retraining increasingly necessary.[1]

Characteristics of the Industry

As the printing and publishing industry is undergoing technological change, its economic condition is characterized by increasing employment, rising production, growing capital investment, intensified research and development, predomination of small firms, and strong craft unions that are showing a trend toward mergers as a response to the changes.

Employment Is Increasing

In 1971, there were nearly 1.1 million employees in the printing industry—approximately 367,000 more than in 1947. This represented a 50% growth in printing industry employment, contrasted to the 29% growth in all manufacturing employment and 15% in nondurable manufacturing. The average annual rates of increase in employment during the two periods of 1947-58 and 1958-71 were approximately the same for the industry as a whole, but not for the selected subindustry groups shown in table 8.

Employment of women in the industry has increased from 250,000 in 1959 to 353,000 in 1971 an increase of 41% (compared with a 25% increase of all employees over this period). Women have also increased as a percentage of total industry employment, from 28% in 1959 to 32% in 1971.

Table 8.—Trends in Employment, Printing and Publishing Industry, Selected Subgroups and Periods, 1947-71

[All employees, in thousands]

Year	Total printing and publishing		Newspapers		Commercial printing			
					Except lithographic		Lithographic	
1947	721		248		180		50	
1958	873		314		194		74	
1971	1,088		370		209		128	
	Percent change							
	Total	Average annual rate	Total	Average annual rate	Total	Average annual rate	Total	Average annual rate
1947-71	50.9	1.7	49.2	1.7	16.1	0.6	156.0	4.0
1947-58	21.0	1.9	26.4	1.9	7.9	1.2	48.9	4.1
1958-71	24.6	1.7	17.8	1.3	7.7	0.6	73.0	4.3

Source: Bureau of Labor Statistics.

About one-third of all printing employees work in printing craft occupations, with the remaining two-thirds employed in positions such as clerks, salesmen, maintenance workers, reporters and editors, and managers. The newspaper and commercial printing segments of the industry each account for roughly one-third of total industry employment. Within these groups, employment gains have been greatest in the rapidly growing lithographic sector of commercial printing.

Production Is Rising

Production increased at a rapid rate during 1954-71 as new equipment was introduced in the industry. Over this period, the Federal Reserve Board index of production nearly doubled (table 9) as demand for printed materials rose with expansion of population, business activity, and income levels. The 3.8% annual rate of increase in 1958-71 was almost equal to the 4.3% increase during the 1954-58 period.

Capital Spending Is Growing. Nearly $1 billion was spent for new plant and equipment in 1970.[2] Expenditures per employee have been greatest in the lithographic sector of commercial printing, averaging $1,300 per employee in 1970, compared with nearly $800 for the industry as a whole. (See table 10.) This primarily reflects the rapid acceptance of web-offset printing, introduced into commercial printing during the 1950's. In the early 1960's,

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[1]The Bureau of Labor Statistics is studying the manpower implications of technological change in the printing and publishing industry. A forthcoming report on the study will be based on data obtained by BLS staff during field visits to selected newspapers and commercial printers using new technology and on a review of industry technical publications and other literature.

[2]U.S. Bureau of the Census.

Table 9.—Production Indexes, Printing and Publishing Industry

[1967 = 100]

Year	Total printing and publishing		Newspapers	
1954	53.6		63.3	
1958	63.3		69.2	
1971	102.2		101.6	
	Percent change			
	Total	Average annual rate	Total	Average annual rate
1954-71	90.7	3.9	60.1	2.8
1954-58	18.1	4.3	9.3	2.3
1958-71	61.5	3.8	46.8	3.0

Source: Federal Reserve Board.

Table 10.—Expenditures for New Plant and Equipment, Printing and Publishing Industry, Average Per Employee, Selected Periods, 1947-70

Year	Printing and publishing	Newspapers	Commercial printing	
			Except lithographic	Lithographic
1947	$313.96	$329.39	.....	.....
1958	468.27	445.31	$509.88	$699.34
1970	792.91	751.47	698.03	1,315.00
	Percent change			
1947-70	152.6	128.1	.....	.....
1947-58	49.1	35.2	.....	.....
1958-70	69.3	68.8	36.9	88.0

Note: Dashes indicate data not available.

Source: Bureau of the Census and Bureau of Labor Statistics.

web-offset printing was further extended into small, suburban newspaper printing and contributed to the significant increase in new capital expenditures per newspaper employee.

Small Firms Predominate. The printing and publishing industry is characterized by a large number of small establishments widely distributed throughout the United States—about 3 out of 4 with fewer than 20 employees. In 1970, establishments with less than 20 employees accounted for 76 percent of all establishments and 15 percent of all employment. Establishments with 100 employees or more constituted only 5 percent of all establishments in 1970, but claimed 59 percent of total employment.[2]

R & D Activities Are Being Intensified. Most research and development in the industry is carried out by equipment manufacturers, trade associations, industry research organizations, and medium-to-large firms with the capital and willingness to experiment. In addition to traditional equipment manufacturers, firms not generally associated with the printing industry—such as companies making electronic computers—are developing new and more productive printing equipment. Because of the lack of capital and of research expertise among small firms, industry research organizations and trade associations (such as the American Newspaper Publishers' Association) are important sources of new technological developments.

Description of New Technologies

The quickening pace of technological change is illustrated by the changes that have occurred in methods of setting type. Hand composition was the sole method of typesetting for several centuries until the first commercial typesetting machines became available in the 1880's. The next important innovation—the teletypesetter—was developed 50 years later. Two decades later, in the 1950's, photographic typesetting machines became available commercially. Technological innovation has accelerated in the last 10 years, with computerized typesetting, cathode ray tube typesetters, optical character reading equipment, and high speed data transmission among the major advances. Approximately 600 typesetting computers, for example, were reported installed in the United States in the fall of 1968, compared with about 100 in the spring of 1964.[3] Important advances that have occured in the major production processes are described in table 11, with a brief summary of their economic advantages and the occupations affected by their use.

While many new technologies are available in the printing industry, frequently involving the application of electronics and advanced photographic techniques, a large segment of the industry—the small printing firms—will continue to use manually operated typesetting machines and other printing equipment. An exception to this is the large number of small daily and weekly newspapers that are converting to photographic typesetting and web-offset printing.

Several factors slow the rate of diffusion of new technology to small firms. Small firms have limited capital resources for experimenting with, and purchasing, new equipment, especially expensive equipment like computers and high-speed printing presses. Moreover, the needs of small firms are for equipment that is highly flexible to meet their usual small volume production runs. The new technology is not often designed to meet these needs. Nor are the owners of many small printing shops particularly receptive to technological change. Many have not developed the philosophy, prevalent in large firms, of actively seeking information on new technology. A further influence is that much of the conventional printing equipment—such as linecasting machines and printing presses—not only serves the need of many small firms quite well, but also has a useful life of a decade or more. Therefore, the new technologies will be introduced primarily in newspapers (of all sizes) and in medium-to-large commercial, book, and periodical printers, where their volume may return economic savings to justify large outlays.

Impact on Occupations and Skills

Specific occupations and skills in the major printing functions of composition, platemaking, and press work will be greatly affected by the new technologies.

[2] U.S. Bureau of the Census.

[3] Survey by Composition Information Services, Inc., Los Angeles, Calif.

Composing Room. The use of phototypesetters and computers can have a considerable effect on composing room employees, who constitute approximately one-half of the industry's craftsmen. The higher operating speeds (separately or in a combined computer-phototypesetter system) require a smaller number of man-hours to perform a given amount of work than the traditional hot metal method. Further, the skills needed to operate phototypesetters and computers are often different from those used in hot-metal typesetting. Consequently, although hot-metal typesetting will remain in use for many more years, its importance will continue to decline and fewer hot-metal typesetters will be needed.

Several new skills are necessary in photo-composition. Type and graphic displays must be assembled and pasted onto layout sheets (paste makeup). A knowledge of photographic processes is necessary for both setting copy onto film and developing the film for platemaking. The developed film must then be assembled and arranged into pages (stripping).

An increasingly necessary, but perhaps not so obvious, skill is the ability to use a typewriter keyboard in which the keys are arranged in a different manner from the Linotype keyboard. Most phototypesetters and the more recent models of hot-metal typesetters are operated by a typewriter keyboard that is directly attached to the typesetting machine, or, more frequently, by tape that is prepared on a separate tape-punching machine utilizing a typewriter keyboard.

The introduction of computers into the typesetting process also requires a new set of skills. Computer input is generally paper tape punched on machines utilizing the typewriter keyboard mentioned above. New jobs of computer console operators and programers are being created. These often can be filled by retraining composing room employees who might otherwise be displaced. A relatively small number of systems analysts will be needed; industry practice thus far has been to hire from outside the firm to fill these positions. Also, computer maintenance will require personnel with a good background in electronics.

Table 11.—Description and Impact of Innovations in Printing Technology

Technology	Description and advantages	Occupations affected
Computers	The primary typesetting functions are "justification" (deciding where to end a line of type so that it remains within predetermined margins) and "hyphenation" (deciding when and where to hyphenate words that would exceed the margins). Computers can make justification and hyphenations in a fraction of the time needed by typesetting machine operators, and thereby make the typesetting process faster and more simple.	Linecasting machine operators, Teletypesetter keyboard operators.
Phototypography	Type is set on strips of photographic film or light-sensitive paper, rather than in metal. Most phototypesetting machines are operated by punched paper tape (rather than by directly attached keyboards), and thus can be run by computer-finished tape. The primary advantage of phototypography is speed. The fastest automated hot-metal machines can set type at speeds of 7-8 characters per second (cps). Most phototypesetting machines operate at speeds of 15-30 cps, and the latest cathode ray tube machines can go up to 1,000 cps. Another advantage is a lower rate of typographical errors.	Composing room employees trained in hot-metal typesetting.
Automated photographic and platemaking equipment.	Automatic film processing systems, electronic color separation equipment, and electronic engraving equipment all operate at considerably faster speed than the conventional (and time consuming) manual processes. Quality of the machine-produced work is both consistent and high, while the quality of handwork is very much a function of the craftsman's skill, and consistency varies even for a highly skilled craftsman.	Photoengravers and lithographers involved in film processing, photographic art work, and plate engraving will be affected, as skill requirements are lower.
Plastic printing plates for letterpress newspaper printing.	Lightweight, low cost, flexible plastic printing plates have been developed that can be used on existing letterpress printing presses in place of the large, heavy lead stereotype plates currently in use. These new plates offer superior printing quality and longer life than lead stereotype plates.	Photoengravers, electrotypers, and stereotypers.
Web-offset printing presses (web-fed lithographic presses).	Web-offset presses print on large rolls (webs) of paper rather than individual precut sheets. For commercial printers who previously used sheet-fed offset, web-offset offers faster printing speeds and paper handling. Newspapers converting from web-letterpress to web-offset gain the advantages of increased printing quality (especially for photographs), faster make-ready time, and improved compatibility with phototypesetting machines.	Sheet-fed offset and web-fed letterpress printing press operators.

Table 12.–Outlook for Employment

Department	Outlook
Composing room	Employment expected to decline slightly, even though the volume of printing will increase, because of the greater productivity of new technology.
	Linecasting machine operators will be among the most rapidly declining occupations, with some employees retraining for tape punching occupations.
	Photocomposition, with its attendant tape punching, machine monitoring, film processing, and paste make-up operations, will come to dominate composing room operations. Employees presently trained in hot-metal typesetting can be retrained for these jobs.
	Computers will become more widely used, creating new jobs for computer typists, programers, and console operators. Many of these jobs will be filled by composing room employees who would otherwise be displaced.
	Machinists with electronics training are, and will continue to be, in high demand.
Platemaking	Platemaking employment will increase, although employment in particular occupations will decline.
	Lithography, as the fastest growing printing process, will be responsible for the most growth in platemaking occupations. However, even lithographic platemaking growth will be somewhat limited by the laborsaving aspects of new technology.
	Photoengraving employment should remain fairly constant in spite of an increase in output. This will result from a combination of laborsaving technology and increased competition from lithography. Some photoengravers have retrained for lithographic occupations–a trend that is expected to continue.
	Employment in electrotyping and stereotyping will decline moderately in spite of the expected increase in printing output. More productive duplicate platemaking equipment, more durable printing plate materials, and competition from lithography will bring about the decline in employment.
Presswork	Due to the increase in printing volume, and in the size and complexity of printing presses, employment for press operators and assistants is expected to rise moderately. The greatest rise will occur in web-offset (lithographic) presswork. The increased speeds and efficiency of new presses will limit to some extent the increase in presswork employment.

Platemaking. The new equipment used in automatic film developing systems, electronic color separation, and electronic engraving, and the new materials used in making letterpress printing plates, are affecting a part of the printing process that has traditionally involved large amounts of highly skilled handwork. With the exception of the still experimental plastic plate systems, these innovations share the advantages of rapid output and consistent high quality (in comparison, the work of even a highly skilled craftsman is not completely consistent from job to job).

The new platemaking equipment puts more emphasis on technical skills to operate, and less on craft skills. Some knowledge of electronics and familiarity with machine operations is particularly important. Traditionally trained craftsmen are generally capable of being retrained for this work.

Presswork. The increasing automation of printing press operations is changing the skill requirements of pressmen considerably. Electronic monitors and controls can perform many press operations faster and more reliably than the press crew. This frees the crew from machine operations, allowing them to spend more time on quality control; but in the process, traditional craft skills become less important, and technical knowledge and ability become more critical.

Web-offset printing presses have received wide acceptance in commercial printing and small-to-medium newspaper printing, where they are expected eventually to print 90 percent of the country's newspapers.

For commercial printers who previously used sheet-fed offset presses, web-offset offers faster press speed and less paper handling; but the skills involved in operating web-fed presses are quite different from those for sheet-fed press operation. For example, web-offset press crewmembers must be able to make decisions faster, and must be more physically agile, than their counterparts operating sheet-fed presses. This generally necessitates training a new press crew, as there is little crossover from sheet-fed offset to web-offset.

Newspapers converting from web-letterpress to web-offset generally decrease their make-ready time, but often must add an additional man to the press crew. Although web-offset is somewhat more complex than web-letterpress, the skills involved are basically similar (a situation that does not exist between sheet-fed presses and web-fed presses), so that web-letterpress crews can be retrained for web-offset operation.

Outlook for Employment

Employment in the printing industry is estimated to increase slightly between 1970 and 1975. Some categories of employees, however, particularly typesetters and those engaged in duplicate platemaking functions, are expected to decrease in number. As indicated in table 12, these declines will be offset by employment growth in such occupations as printing press operators and lithographic platermakers. The introduction of electronic computers in composing room functions will require key new positions involving programing, computer console operation, and related functions. The growing substitution of electronic for mechanical equipment will require more maintenance employees with a background in electronics.

Innovations in printing technologies have focused attention on methods of preparing employees for new job demands. The printing trade unions, in particular, are intensively involved in

developing methods of easing the impact of technological change on its members, many of whom are in jobs where skills are being substantially modified.

Illustrative of the pressure that unions believe themselves to be under is the increasing number of strikes in the newspaper and commercial printing segment of the industry. This is particularly true of strikes lasting over 100 days which, according to BLS data, totaled 19 during 1947-57 and 65 for the 1958-68 period. Apart from wage disputes that have been a part of most strikes, a common thread—especially in the longer strikes—has been controversy over the introduction of new technology and the conditions of its use.

Some of the more important attitudes and policies developed in response to the effects of technological change relate to job security and retraining. Data from the latest BLS surveys of collective bargaining agreements in the printing industry, covering those in effect during 1962-67 and covering 1,000 workers or more, show the extent of industry contract provisions relating to adjustment to technological change:

	Contracts studied	*Contracts having provisions*
Plant movement, transfer, and relocation allowances	28	3
Severance pay and layoff benefits	37	6
Paid vacations and holidays	33	33
SUB plans and wage-employment guarantees	37	1
Training and retraining	28	13

Training programs have been an important technique of preparing employees to meet changing job requirements. The International Typographical Union (ITU), for example, has long maintained that its interest can best be served by supplying industry with the most skilled workers available. The union's training center in Colorado offers courses in computer operations, all forms of composition, film processing (including color film), platemaking, and offset press operations. Most of the courses are 3 weeks in length, allowing union members to complete a course while on vacation.

The International Printing Pressmen and Assistants Union (IPPAU) also has supported technological change and advocated retraining programs for members whose skills have become obsolete. For many years IPPAU operated a training school. However, it became impractical to keep up with the rapidly increasing variety of printing presses entering the market, and the school was replaced by an informally structured program in which members receive training on the particular presses used where they are employed.

Management officials in many printing firms also are aware of the importance of training programs and many programs have been developed, ranging from informal on-the-job training to comprehensive programs involving employee testing, lectures within the company, and attendance at special schools. In some firms, displaced employees are assigned to "retraining pools" from whence they are retrained and assigned to other jobs available within the firm.

Some unions have established formal organizations to study the manpower implications of technological change. The Lithographers and Photoengravers International Union (LPIU), for example, concerned over the threat of technological change to job security, established a Committee on Technological Developments during its 1965 convention. The Committee's purpose is to study the employment impact and the cost savings effects of technological changes, and, based on this, to formulate plans that locals can use in negotiations with employers that will assist the members in acquiring a fair share of the benefits involved. LPIU has developed a two-part policy for providing job security in a time of technological change: extensive training programs—including training centers in major cities—and early retirement of older union members. Discussions with employers over early retirement began in late 1965, and by the end of 1966 over half of the members covered under contracts negotiated during the year had gained early retirement benefits.

Mergers of unions have been another consequence of changing technology. The rationale behind the merger trend is that the new technologies often cut across traditional craft lines, jeopardizing union security and giving rise to jurisdictional disputes between unions. The largest merger has been between the Amalgamated Lithographers of America and the International Photoengravers' Union, forming the Lithographers' and Photoengravers' International Union. Local 1 (New York area) of ALA rejected the merger and became an independent union, later arranging an informal association with the International Typographical Union. The International Stereotypers' and Electrotypers' Union reportedly is also contemplating a merger. Other mergers have been discussed between various unions, but were not realized. This is, however, a trend that could continue.

As unions have become more concerned over job security, they have attempted—with fair success—to establish some degree of control over the use of the new equipment. It is not uncommon for collective bargaining contracts to contain provisions specifying that when new equipment is introduced, it will be operated by the union members covered in the contract, or that the union members will have the first opportunity to receive the training (often at company expense) necessary to operate the new equipment, or that employees who are displaced will be retrained by the company for other jobs. More stress is also being placed on factors such as pensions, retirement age, shorter workweeks, and formal training.

A specific—and rather unusual—example is provided by Local 6 (New York) of the ITU. In its negotiations with New York City newspapers, the union demanded a payment from the newspapers in return for newspaper usage of "outside" (TTS) tapes. Until this demand was met, union members refused to operate the equipment. By early 1966, three large newspapers had agreed to these conditions. The money contributed by the newspapers was used to establish funds for retraining displaced employees, supplemental unemployment benefits, incentives for early retirement, and supporting pension and welfare funds that could suffer if union memberships were reduced.

A more recent development is an agreement worked out in early 1968 to study the effects of automation on manpower. The parties to the agreement are ITU Local 6, three New York newspapers, and some of the commercial printing shops in the city. The results of the study are to be used to determine how the benefits of automation can be most widely spread among employers and employees.[4] In 1970, negotiations between ITU and the newspapers were predominantly concerned with wages rather than with new technologies.

[4]Further information on the policies developed by ITU Local 6 to meet the problems posed by technological change can be found in Harry Kelber and Carl Schlesinger, *Union Printers and Controlled Automation* (New York, The Free Press, 1967).

Outlook for the Industry

Technological innovation will continue to change the printing industry during the decade of the 1970's. Although the pace at which innovations will be diffused may be slower than in other industries due to the particular structure and economic characteristics of the printing industry, substantial change will occur, causing considerable modification in job skills. Consequently, training programs and other methods of adjustment will continue to be needed. Special attention should be given to revising trade school curriculums to include such newer developments as phototypography and electronics.

The rising demand for printed products will ease the impact of technological change on manpower. This situation has occured before, although on a more restricted basis, with the introduction of linecasting machines in the late 19th century and improvements in printing presses (especially the development of automatic press feeders) in the early 20th century. In both instances, considerable retraining was necessary and in the latter case, one group—manual press feeders—experienced considerable displacement. [5] But, in both cases, demand increased sufficiently to mitigate the displacement for most of the affected groups. In the current situation, technological change is so widespread that it affects all facets of the printing process. Displacement will probably occur in certain occupations; but attrition should be able to handle much of it when combined with increased demand for printed products, a somewhat slow rate of diffusion of technological change, and extensive retraining.

[5] Elizabeth F. Baker, *Displacement of Men by Machines* (New York, Columbia University Press, 1933).

NBS ISSUES CONSUMER GUIDE ON PRESERVATION OF BOOKS

If you are worried about the preservation of valuable books, personal documents, or photographic prints and films, the National Bureau of Standards, Department of Commerce, has recently issued a booklet which may be of value to you. CARE OF BOOKS, DOCUMENTS, PRINTS AND FILMS is a 16-page booklet, liberally illustrated, which describes in everyday language how the experts protect paper, books and photographic materials from insects, heat, humidity, dust and sunlight.

The booklet opens with a discussion of the various kinds of papers; describes the construction of books; and gives a detailed description of the various insect and environmental enemies which cause books and papers to deteriorate. Explicit directions are given for the care of papers and books, and for making minor repairs. A short section on prints and films offers practical advice on the care and preservation of both negatives and prints.

A carefully selected bibliography offers authoritative sources for readers who want to delve deeper into the subject.

The booklet is the fifth in a series of Consumer's Guides issued by the Bureau. It is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402, and from the Consumer Product Information Center, Washington, D.C. 20407. Price: 45 cents.

STATISTICAL SERIES

Table S-1.—U.S. Exports of Books, Periodicals, Other Printed Matter, Loose-Leaf Binders, and Printing Plates, January-March 1972

[Schedule B Nos. 6423010–6423030, 7182230, 8921110–8929100, 8929400, 8929820–8929850, 8942410]

Description and Schedule B Number	1972 January-March	Percent change from January-March 1971
Grand total	$86,044,674	+9.7
Printing plates and cuts (all processes) (7182230)	866,940	+70.3
Printed matter, total	85,177,734	+9.3
Manifold business forms (6423010)	287,584	+9.8
Albums and blankbooks, except business forms (6423020)	364,754	+115.9
Loose-leaf binders (6423030)	259,432	+18.6
Maps, charts, atlases, and globes (8921300)	690,140	−20.3
Bound periodicals and newspapers (multiple issues) (8921160)	3,108,869	+28.9
Newspapers, unbound (8922010)	693,968	−29.5
Periodicals, unbound (8922020)	21,355,534	+12.6
Music in books and sheets (8923010, 8923020)	527,309	+72.0
Transfers (decalcomanias) (8924100)	797,502	+41.2
Picture postcards, except greeting cards (8924210)	95,235	+56.1
Greeting cards (8924220)	604,010	+32.0
Paper and paperboard labels and wrappers (8929100)	1,436,238	+21.1
Calendars, including calendar blocks, of paper (8929400)	124,331	+46.2
Advertising printed matter (8929820)	3,757,365	+10.2
Catalogs and directories (8929830)	1,237,198	+49.7
Business service publications (8929840)	1,184,705	+12.9
Playing cards (8942410)	1,025,225	+17.6
Printed matter, n.e.c. (8929850)	6,188,067	−14.3
Books, total	41,440,268	+9.1
Textbooks, workbooks and standardized tests (8921110)	8,217,648	−0.9
Technical, scientific, and professional books, except school textbooks (8921120)	6,787,995	+20.3
Bibles, Testaments, and other religious books (8921130)	2,012,503	+57.7
Dictionaries (8921140)	889,719	−3.5
Encyclopedias (8921150)	6,152,826	−12.1
Books, n.e.c. (8921170)	15,810,652	+10.2
Children's picture and painting books (8921200)	1,568,925	+209.6

Note: Data do not include individual shipments valued under $250.
n.e.c.—Not elsewhere classified.
Source: U.S. Department of Commerce, Bureau of the Census.

Table S-2.—U.S. Exports of Books, Periodicals, Other Printed Matter, Loose-leaf Binders, and Printing Plates, January-March 1972

[Schedule B Nos. 6423010–6423030, 7182230, 8921110–8929100, 8929400, 8929820–8929850, 8942410]

Principal markets	1972 January-March	Percent change from January-March 1971	Principal markets	1972 January-March	Percent change from January-March 1971
Argentina	$355,869	−56.1	Japan	$3,421,142	+15.9
Australia	5,831,345	+53.3	Mexico	2,170,318	−25.2
Bahamas	347,364	+4.3	Netherlands	2,004,534	+62.0
Belgium-Luxembourg	630,449	−4.2	New Zealand	772,067	+16.0
Brazil	1,265,483	+52.1	Panama	559,791	+15.6
Canada	41,257,272	+8.1	Peru	471,148	+34.1
Chile	166,854	−45.9	Philippines	619,668	−12.3
Colombia	322,170	+41.7	Republic of Korea	189,879	−62.2
El Salvador	83,113	+13.2	Republic of South Africa	2,281,173	+39.3
France	1,180,331	+5.3	Singapore	690,244	−3.6
Greece	155,691	+99.3	Spain	443,391	+99.0
Hong Kong	381,233	+22.4	Sweden	272,435	−46.6
India	383,354	−16.6	Switzerland	580,846	+37.7
Israel	300,817	−5.5	United Kingdom	8,267,791	+11.1
Italy	1,552,524	+52.0	Venezuela	1,247,052	+18.1
Jamaica	340,601	−26.3	West Germany	1,798,815	+13.4

Note: Data do not include individual shipments valued under $250.

Source: U.S. Department of Commerce, Bureau of the Census

Table S-3.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-March 1972

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500, 2706300, 2707000, 2708500, 2731000, 2733000, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Description and TSUSA number	1972 January-March	Percent change from January-March 1971
Grand total	$62,736,091	+50.4
Printing plates and cuts (all processes) (6683800)	228,690	+33.1
Printed matter, total	62,507,401	+50.4
Newspapers (2705500)	2,763,193	+46.3
Periodicals (2706300)	5,489,897	+1.1
Tourist literature about places outside the U.S. (2707000)	1,572,748	−6.3
Printed catalogs offering U.S. products (2704500, 2705000)	234,272	−0.1
Catalogs, price lists, and trade notices of foreign businesses (2708500)	1,281,141	+84.4
Music in books or sheets (2731000)	208,401	+37.3
Globes (2733000)	118,145	+94.8
Maps, charts and atlases (2733500)	329,739	−0.2
Decalcomanias in ceramic colors (2736500, 2737000)	133,939	+53.9
Other decalcomanias (2737500, 2738000)	219,716	−51.4
Postcards (2738500-2739500)	93,387	+19.0
Greeting cards and social and gift cards, with words (2740500)	796,712	+44.8
Other greeting cards and social and gift cards (2740000)	18,752	−5.9
Calendars of paper (2741000-2742000)	273,228	+164.8
Labels, flaps, and bands (2742300-2743500)	160,589	+9.2
Pictorial matter, lithographed, n.s.p.f. (2746000, 2746500)	1,135,635	+59.9
Photographs, exposed film, and other pictorial printed matter, n.s.p.f. (2747000)	1,188,415	+19.4
Playing cards (7342500)	318,390	+3.6
Diaries, notebooks, and address books (2565600)	761,591	−2.3
Other blankbooks (2565800)	46,970	+3.9
Albums (autograph, photograph, record, stamp) (2566000)	2,993,017	+15.5
Printed matter, n.s.p.f., suitable for use in book production (2747300)	543,153	+79.7
Other printed matter (2700500-2701500, 2747500-2749000)	2,397,212	+50.8
Books, total	39,429,158	+76.7
Bibles and prayer books (2702520)	1,942,346	+98.1
Books, foreign language (2702540)	3,359,003	+20.6
Other books, n.s.p.f., wholly or in part the work of an author who is a U.S. national or domiciliary (2702560)	528,683	−54.0
Other books (2702580)	32,911,298	+90.7
Toy books and coloring books (7375200)	687,828	+378.8

Note: Data do not include individual shipments valued under $250.
n.s.p.f.—Not specially provided for.
Source: U.S. Department of Commerce, Bureau of the Census.

Table S-4.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-March 1972

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500, 2706300, 2707000, 2708500, 2731000, 2733000, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Principal suppliers	1972 January-March	Percent change from January-March 1971	Principal suppliers	1972 January-March	Percent change from January-March 1971
Australia	$220,255	+102.0	Italy	$4,315,539	+147.8
Austria	145,457	+25.0	Japan	7,333,038	+25.6
Belgium-Luxembourg	535,305	−31.1	Mexico	1,812,813	+51.7
Canada	9,823,763	+55.3	Netherlands	2,857,559	−18.3
Czechoslovakia	160,646	+717.4	Spain	1,422,220	+53.7
Denmark	251,115	+12.6	Sweden	480,544	+54.2
France	1,947,759	+47.5	Switzerland	1,461,322	+23.3
Hong Kong	1,108,834	+105.3	United Kingdom	18,791,079	+57.8
Ireland	150,999	−49.3	Venezuela	300,962	+71.0
Israel	3,184,302	+645.4	West Germany	4,123,090	+19.0

Note: Data do not include individual shipments valued under $250.
Source: U.S. Department of Commerce, Bureau of the Census.

Table S-5.—Selected U.S. Statistics: Printing, Publishing, and Allied Industries, Annual Average, 1970 and 1971-72 by Quarters

Economic indicators	First quarter		Second quarter		Third quarter		Fourth quarter		Annual average
	1972[p]	1971	1972	1971	1972	1971	1972	1971[r]	1970
NATIONAL INCOME AND PRODUCT[a]									
National income ..... bil. $ ..	898.7	831.7		847.3		855.2		870.1	795.9
Compensation of employees ..... do ..	679.9	627.3		638.0		645.6		656.6	601.9
Wages and salaries ..... do ..	607.3	561.4		571.0		577.3		587.0	541.4
Supplements to wages, salaries ..... do ..	72.6	65.9		67.0		68.3		69.6	60.5
Personal income ..... do ..	900.1	833.5		853.4		864.6		876.7	803.6
Disposable personal income ..... do ..	764.3	722.0		739.6		748.5		755.0	687.8
Personal consumption expenditures ..... do ..	691.8	644.9		657.4		668.8		677.2	615.8
Gross national product ..... do ..	1,103.6	1,020.8		1,040.0		1,053.4		1,072.9	974.1
Manufacturers' new plant and equipment exp. ..... do ..	31.92	30.46		30.12		29.19		30.35	32.00
PURCHASING POWER OF THE DOLLAR[a]									
As measured by:									
Wholesale prices ..... 1967 = $1.00 ..	.855	.889		.879		.879		.871	.906
Consumer prices ..... do ..	.809	.837		.828		.828		.815	.860
INDUSTRIAL PRODUCTION INDEX (FRB)[b]									
All manufacturing ..... 1967 = 100 ..	107.2	104.5		106.4		103.5		105.9	105.2
PRINTING AND PUBLISHING INDUSTRIES (SIC 27)									
Production index (FRB)[b] ..... 1967 = 100 ..	98.3	94.8		101.3		107.0		105.8	104.1
Corporate sales[c] ..... mil. $ ..	6,545	5,935		6,399		6,487		6,914	*24,297
Corporate net profits:[c]									
Before taxes ..... do ..	415	365		495		520		623	*1,941
After taxes ..... do ..	199	183		261		262		349	*1,025
Percent of sales	3.0	3.1		4.1		4.0		5.0	4.2
All employees ..... thous ..	1,087.9	1,092.8		1,086.6		1,081.3		1,088.9	1,106.3
Production workers ..... do ..	664.4	669.4		665.2		658.2		665.9	682.0
Average weekly earnings ..... $ ..	163.15	151.93		156.64		159.58		162.26	147.78
Average hourly earnings ..... $ ..	4.37	4.08		4.17		4.24		4.30	3.92
Average weekly hours	37.3	37.3	n.a.	37.5	n.a.	37.7	n.a.	37.7	37.7
NEWSPAPERS (SIC 271)									
Advertising (64 cities)[d] ..... mil. lines ..	828.1	760.5		858.2		780.9		934.4	*3,119.5
All employees ..... thous ..	371.5	371.3		369.9		369.3		371.7	373.0
Production workers ..... do ..	180.3	180.2		180.1		178.3		180.5	181.3
Average weekly earnings ..... $ ..	166.81	153.64		161.43		162.53		169.16	150.94
Average hourly earnings ..... $ ..	4.79	4.42		4.59		4.64		4.75	4.24
Average weekly hours	34.8	38.1		35.2		35.4		35.6	35.6
PERIODICALS (SIC 272)									
Advertising cost, total[e] ..... mil. $ ..	273.8	272.3		348.2		264.2		365.5	*1,185.7
All employees ..... thous ..	70.9	73.5		73.8		71.7		70.5	74.8
Production workers ..... do ..	23.8	23.7		21.3		22.3		22.1	25.0
Average weekly earnings ..... $ ..	178.97	175.93		169.59		176.61		178.34	169.71
Average hourly earnings ..... $ ..	4.53	4.33		4.30		4.43		4.47	4.18
Average weekly hours	39.5	40.6		39.5		39.9		39.9	40.6
BOOKS (SIC 273)									
Manufacturing activity, percent cumulative monthly change from previous year[f]	+4.1	−1.5		+0.1		+0.0		+0.0	−3.7
All employees ..... thous ..	104.1	99.7		101.1		101.3		101.8	99.3
Production workers ..... do ..	58.8	54.4		55.9		56.7		56.2	54.2
Average weekly earnings ..... $ ..	150.27	143.42		146.20		151.00		148.61	135.84
Average hourly earnings ..... $ ..	3.83	3.69		3.72		3.80		3.83	3.51
Average weekly hours	39.2	38.9		39.3		38.4		38.8	38.7
COMMERCIAL PRINTING (SIC 275)									
All employees ..... thous ..	381.3	351.2		349.9		346.3		350.0	356.8
Production workers ..... do ..	266.0	269.8		268.7		265.6		268.6	275.7
Average weekly earnings ..... $ ..	168.85	156.71		161.44		164.89		167.01	153.24
Average hourly earnings ..... $ ..	4.42	4.12		4.20		4.29		4.34	3.97
Average weekly hours	36.2	38.1		38.5		38.4		38.6	38.6

See footnotes at end of table.

UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON, D.C. 20402

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U.S. GOVERNMENT PRINTING OFFICE

U.S.MAIL

Table S-5.—Selected U.S. Statistics: Printing, Publishing, and Allied Industries, Annual Average, 1970, and 1971-72 by Quarters-Con.

Economic indicators	First quarter		Second quarter		Third quarter		Fourth quarter		Annual average
	1972[p]	1971	1972	1971	1972	1971	1972	1971[r]	1970
COMM. PRTG., EXC. LITHO. (SIC 2751)									
All employees ..... thous..	206.6	212.9		211.0		207.4		209.8	217.9
Production workers ..... do..	160.5	165.5		164.4		161.7		163.7	170.1
Average weekly earnings ..... $..	162.11	151.21		156.41		158.84		161.37	149.00
Average hourly earnings ..... $..	4.27	3.99		4.08		4.13		4.17	3.87
Average weekly hours	37.9	37.7		38.4		38.5		38.7	38.5
COMM PRTG., LITHO. (SIC 2752)									
All employees ..... thous..	129.4	125.8		126.6		127.5		128.7	127.3
Production workers ..... do..	96.8	95.0		95.2		95.4		96.3	96.9
Average weekly earnings ..... $..	179.80	165.35		169.18		175.44		176.15	160.66
Average hourly earnings ..... $..	4.65	4.31		4.39		4.53		4.56	4.13
Average weekly hours	38.6	38.3		38.6		38.7		38.4	38.9
BOOKBINDING AND RELATED INDUSTRIES (SIC 278)									
All employees ..... thous..	54.2	56.6		55.7		55.2		54.3	58.5
Production workers ..... do..	44.8	46.7		46.0		45.8		44.7	48.1
Average weekly earnings ..... $..	125.66	115.65		120.02		122.99		123.56	113.02
Average hourly earnings ..... $..	3.29	3.09		3.15		3.20		3.22	2.99
Average weekly hours	38.2	37.5		38.1		38.4		38.0	37.8
OTHER PRINTING AND PUBLISHING INDUSTRIES (SIC 274, 6, 7, 9)									
All employees ..... thous..	139.1	140.6		139.6		137.5		140.6	143.9
Production workers ..... do..	92.5	94.6		93.3		90.4		93.9	97.7
Average weekly earnings ..... $..	162.37	151.47		153.95		155.28		157.66	145.54
Average hourly earnings ..... $..	4.31	4.00		4.08		4.12		4.16	3.83
Average weekly hours	37.7	37.9		37.7		37.7		37.9	38.0
OTHER ADVERTISING									
Direct mail dollar volume[g] ..... mil. $..	n.a.	744.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*2,827.0
PAPER PRODUCTION, CONSUMPTION, INVENTORY AND PRICES									
Newsprint:									
Used by publisher[h] ..... thous. tons..	1,783	1,666		1,795		1,667		1,925	7,130
Publishers' inventory[h] ..... do..	691	743		700		685		697	749
Price, rolls, contract (BLS) ..... $..	161.70	153.70		158.10		158.10		158.10	150.50
PAPER									
Production:[i]									
Groundwood, uncoated:									
Publication and printing ..... short tons..	305,223	260,151		256,372		265,148		297,401	*1,072.2
Coated, printing and converting:									
Coated, one side ..... do..	109,248	117,268		105,321		99,089		101,703	*401.8
Coated, two sides ..... do..	768,578	719,936		705,765		683,231		743,895	*2,875.4
Book, uncoated:									
Publication and printing ..... do..	453,234	403,823		422,407		413,318		438,113	*1,607.1
Writing:									
Chemical wood pulp ..... do..	665,073	590,072		605,723		604,374		625,387	*2,335.8
Wholesale price index (BLS):									
Book paper, A grade .....1967 = 100..	109.2	112.0		112.0		109.2		109.2	109.2
Book paper, No. 2 plain, offset .....do..	117.8	114.7		114.7		117.8		117.8	111.8
Wood bond ..... do..	121.8	117.0		120.3		121.5		121.8	115.5

Note: Employment and earnings data from Department of Labor, Bureau of Labor Statistics (BLS). Data for most recent quarter are preliminary. FRB-Federal Reserve Board. [r]Revised. [p]Preliminary. n.a.—Not available. *Cumulative. [a]*Survey of Current Business, Office of Business Economics.* Quarterly data are seasonally adjusted at annual rates. [b]Without seasonal adjustment. [c]*Quarterly Financial Report*, Federal Trade Commission and Securities and Exchange Commission. [d]Media Records, Inc. Data are three months totals. [e]Publishers' Information Bureau, Inc. Data are three months totals. [f]BOOK PRODUCTION INDUSTRY; production of 18 firms. [g]Direct Mail Advertising Assn., Inc. Data are three months totals. [h]American Newspaper Publishers' Assn.; 525 newspapers, approximately 75% of total newsprint used. Consumption data are three months total. [i]Bureau of the Census. Data are three months totals. Exports generally equal imports, production usually equivalent to consumption.